Attachment 2
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COMMENTS AGAINST "FEASIBILITY STUDY FOR BUILDING 374 PONDSLUDGE PROCESSING"

1. Page 4, Section 2.0, first paragraph: This paragraph states how dangerous the pond materials are. In actual fact, Building 374's SAR makes it a low hazard facility, and sets up criteria to ensure that no feed will be permitted that violates that status.

2. Page 4, section 2.0, second paragraph: This paragraph attempts to discredit HNUS, stating that HNUS' previous experience is limited to processing high-viscosity, high-density oilfield slurry, which is very different from the 207 pond sludge. Leon Collins flatly contradicted this, responding that HNUS has experience with making cement that dates back to 1928. It is unclear why the authors would wish to discredit HNUS.

3. Page 5, paragraph 1: The gist of this paragraph is that the HNUS data, which is one of the most exhaustive assays I've ever seen, is not adequate because it had "inconclusive data that required some of the tested chemical components to be estimated." Because of this, the report states that the assay is inadequate. The argument that we need 100% data prior to action is an old stalling tactic -- we will never get 100% data, so we actually need to live with the best that we can get. In addition, we have plenty of other assays, especially the Weston one.

4. Page 5, paragraph 2: This paragraph talks about the difficulties of dewatering hydrated salts. The statement is made that hydrated salts are chemically active, which makes no sense to me. The paragraph's point, which is that hydrated salts cannot be allowed, does not convince me because I disagree with the chemical activity argument.

5. Page 5, paragraph 3: This paragraph misuses the term "reactivity" to denote the propensity of a salt to degrade into a nonhydrated salt and water. This paragraph also discusses problems associated with the release of water of hydration, but ignores the RCRA implications of free water in a waste form, which is a serious concern. The report only considers the expansion and bursting of confinement containers, which the report states is an inevitable conclusion. I disagree -- steel containers can accept a degree of residual stress. Qualitative statements are not enough here -- we need some engineering analysis, which is not provided.

Also, the confused statement is made that a heat sink "will tend to enhance the reactivity of the material." Clearly, the author confuses a heat source, which will destabilize, with a heat sink, which will not.

The concern that the salts will dissociate in the presence of "increased ambient temperature or sunlight" doesn't state what the source is of the increased temperature or sunlight. The proposed disposal is in the ground, which has a constant year-round temperature and no sunlight.

6. Page 6, paragraph 1: This paragraph uses pious motherhood statements to make the point that we need to study the ponds thoroughly, implying that studies to date are inadequate. I disagree -- we've got plenty of data.

7. Page 6, section 3.0: The first paragraph of Section 3.0 states that approximately 2 million gallons of water remain in the 207B ponds. This conflicts with Table 1, which states that the 207B ponds contain only 175,000 gallons of liquid. From the Preliminary Analysis of Treatment and Disposal Options for Solar Ponds Wastes report, page 2-3, the B ponds are all 175 feet by 245 feet when fully filled, and B North and Center have maximum depths of 6.5 feet, while B South has a maximum operating depth of 5.5 feet. Multiplying all that out yields a maximum volume of 793,187.5 cu ft, which is 5.9 million gallons. So I believe the 2 million gallons (⅓ full) more than the 175,000 gallons(3% full) figure.

8. Page 7, last paragraph of Section 3.0: The statement is made that the gross alpha limit is 75,000 pCi/l for the cold side of Building 374. This limit actually applies to the feed into the cold side, not to the entire cold side (this is a significant difference, because the cold side contains concentrating operations). In addition, this limit is not cut-and-dried -- there are two limits, 13,500 pCi/l for general solutions, and 75,000 pCi/l for pond liquids only. It is not clear which limit would apply for pond sludge.

9. Page 8, paragraph 2: the intent of this paragraph is unclear.

10. Page 9, first paragraph: It is stated here that "If all the sludge in the 207C pond is insoluble and resuspended, the suspended solids content of the brine solution will be 3.3%." This conflicts with the statement made in page 6's last paragraph, which states that the 207C solids concentration is 59% for undissolved sludge and 37% to 42% for brine, unless there is about a 20-to-1 ratio of liquids to sludge in 207C.

11. Page 9, paragraph 3: Sentences 4 and 5 use the terms brine and sludge interchangeably. This indicates a complete misunderstanding of the ponds.

12. Page 9, paragraph 4: This paragraph has flawed reasoning. The assumption is made that the Spray Dryer cannot handle more than 4% solids, without referencing the actual design capability. Based upon the 4% concentration, the time to dewater through the Spray Dryer is calculated, and found to be 16 months, which the author deems unacceptable. There are two objections to this: 1. Obviously, if the Spray Dryer can accommodate a higher concentration, dilution can be less, and so can processing time. 2. For the hundreds of millions of dollars that could be saved by sludge volume reduction, a 16 month processing time is insufficient by itself to disqualify the Spray Dryer operation.

13. Page 10, first paragraph: What's the point of this paragraph?

14. Page 10, Section 7.0, second paragraph: Again, what's the point of this paragraph? Statements like "Equipment modifications will be required to permit loading dried salts into storage containers" ignore the point that the modifications are entirely possible, and that we could possibly save hundreds of millions of dollars by doing them.

15. Page 11, section 8.0, first paragraph: The statement is made that the temperature in the Spray Dryer and its outlet is 140 C, which ignores the fact that the inlet temperature is 480 C, per Leon Collins. The report states, on its PROCESS DATA sheet, that this temperature is 380 C. This omitted fact destroys the report's point, which is that the pathogens may survive this process.

16. Page 11, section 8.0, second paragraph: This paragraph advocates chlorination based upon the erroneous conclusion that heat sterilization will not be adequate.

17. Page 12, paragraph entitled Hazardous Release to the Environment: How would dry salt burn? This seems farfetched.

18. Page 14, first paragraph: It is stated that, after two processes remove the organics and the metals from the sludge, a liquid will be left which can be processed through the Building 374 evaporator, and then "The final salt product will be a sanitary waste." This confused assertion apparently believes that any salts left dissolved in the liquid will be sanitary because the organics and metals removal will be 100% effective. Among other things, it ignores the "derived-from" RCRA regulations.

19. Page 14, second, third, fourth, eighth, and ninth paragraphs: These paragraphs, which deal with resultant waste, overlook that organic sludge waste has been created by this process.

20. Page 14, third paragraph: The 95% removal factor assumed here appears to be derived from thin air.

21. Page 14, Section 9.4: This description of Chemical Plasma Processing is impossible to follow. It "promotes a controlled efficient reaction..." ???

22. Page 15, first paragraph: It is stated that Chemical Plasma Processing has "yielded production efficiencies up to 95% with very little waste product..." This sounds like an idealized lab-scale recovery operation of a single substance in solution, which is inapplicable to the Solar Ponds. The Solar Ponds have many substances in dilute solution.

The statement is also made that the hazardous components will be converted to reusable products. The time and effort to separate out the individual components would actually be so

prohibitive as to preclude reuse altogether; in addition, regulators' approval would be necessary prior to actual reuse, and that will be another prohibitive effort, especially if the "reusable" product has a variable composition.

The assumption that nonreclaimed material will be considered sanitary waste obviously ignores the existence of regulators and the RCRA "derived-from" rules.

23. Page 15, second, third, and fourth paragraphs: Assumes 100% recovery of waste, based upon best-case reported recoveries of 95%. This is a completely unacceptable and unethical practice.

24. Page 16, section 10.0 1.b.: It is considered a major engineering difficulty that, after dilution, the gross alpha may exceed the 75,000 pCi/l limit. The obvious possibility of simply diluting the stream more is ignored.

25. Page 16, section 10.0: The recommendations section ignores the alternative processing options section. Why were alternatives investigated?

26. General: This is a preliminary investigation, not a feasibility study. The difference is that this is a qualitative review that does not take into account economics or projected process flows, etc.

MAJOR POINTS:

1. Report states that more data is needed. Disagree - we have plenty of data already, in Weston's and HNUS' reports especially. Since the report didn't specify what additional data is required, I get the impression of stalling.

2. Bound hydration in salts viewed as major problem. Disagree - salts will not decompose and release water to any major degree, and containers will absorb some stress, if present.

3. Report states that contaminants are extremely dangerous. Disagree - Building 374 SAR sets LCO conditions which must be met for operation, and ensure that Building 374 is a Low Hazard facility.